

REMARKS

Applicants respectfully request reconsideration and allowance in view of the foregoing amendments and following remarks. In the Office Action, mailed June 13, 2003, the Examiner objected to the drawings and rejected claims 1, 2, 4, 5, 8, 9, 15, 16, 18, 19, 22, 23, 29, 31, 34 and 35. By this amendment claims 1, 15, 34 and 35 have been amended to further clarify the invention. Following entry of these amendments, claims 1, 2, 4, 5, 8, 9, 15, 16, 18, 19, 22, 23, 29, 31, 34 and 35 will be pending in the application.

Drawing Objections

In the Office Action, the Examiner objected to the drawings for two specific reasons under 37 C.F.R. §1.83(a) for allegedly not showing every feature of the invention specified in the claims. Applicants respectfully traverse the objections.

First, the Examiner objected to the drawings for allegedly failing to show "the offset in a second signal to be transmitted by the second unit" as recited in claims 1, 15, 34 and 35. Applicants traverse this "second signal ... second unit" objection by directing the Examiner to the combination of certain features of Applicants' Figures 2 and 3. Figure 2 refers to "... signal from the base station" and Figure 3 details generation of a second signal by means of block 304.

Second, the Examiner objected to the drawings for allegedly failing to show "means for performing a correlation on a digital representation of the first signal so as to lock onto the offset in the carrier frequency" as recited in claims 4¹ and 18. Applicants traverse this "correlation" objection by directing the Examiner to the detailed language covering correlation of digitized input signals on page 8 of Applicants' specification and shown in FLL block 202 of Figure 2.

For at least these reasons, Applicants respectfully request withdrawal of the 37 C.F.R. §1.83(a) objections to the drawings.

Claim Rejections under 35 U.S.C. §102(e)

In the Office Action, the Examiner rejected claim 29 under 35 U.S.C. §102(e) as allegedly

¹ In the Office Action, the Examiner listed claims 9 and 18 for this drawing objection. However, because claim 9 does not recite the quoted limitation and because the Examiner later rejects claims 4 and 18 together in subparagraph 4.(4), Applicants presume the Examiner meant this drawings objection to pertain to claims 4 and 18.

being anticipated by U.S. Patent No. 5,781,847 to Clarke, et al. ("Clarke") and claims 1, 2, 4, 5, 8, 15, 16, 18, 19, 22, 34 and 35 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 5,982,809 to Liu, et al. ("Liu"). Applicants have amended claim 1 to further clarify the invention. Thus, Applicants respectfully traverse the rejections of claims 1, 2, 4, 5, 8, 15, 16, 18, 19, 22, 29, 34 and 35.

An anticipation rejection is proper when a patent applicant has claimed an invention that "was described in ... a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent." 35 U.S.C. §102(e). A claim is anticipated under 35 U.S.C. §102(e) "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570 (Fed. Cir. 1988) (emphasis in original), *cert. denied*, 488 U.S. 892 (1988).

For at least the reasons stated below, Applicants assert that both Clarke and Liu fail to expressly or inherently describe each and every element of the invention claimed by Applicants and, therefore, that Applicants' rejected claims 1, 2, 4, 5, 8, 15, 16, 18, 19, 22, 29, 34 and 35 are patentably distinct from Clarke and Liu.

Independent Claim 29

Applicants' independent claim 29 recites a device adapted to be used in a first unit that can communicate with a second unit using a common carrier frequency that includes:

a frequency lock loop that is coupled to receive a digital representation of a first signal transmitted by the second unit, the frequency lock loop being adapted to detect a carrier frequency offset in the first signal and to produce offset information corresponding thereto; and

a frequency shift block that is coupled to receive the offset information and data to be transmitted by the first unit in a second signal to be received by the second unit, the frequency shift block being adapted to digitally shift the data in frequency in accordance with the common carrier frequency and the carrier frequency offset so that the effects of the carrier frequency offset to be perceived by the second unit will be substantially reduced.

Clarke neither discloses nor suggests a device that includes a frequency shift block being adapted to digitally shift the data in frequency in accordance with a common carrier frequency and

the carrier frequency offset as required by independent claim 29.

In asserting anticipation of the invention as claimed in independent claim 29, the Examiner refers to Figures 1 & 3 of Clarke, as well as col. 5, ll. 12-15; col. 5, ll. 26-34; col. 7, ll. 17-23; and col. 11, ll. 22-60, of Clarke. These citations of Clarke illustrate creating offset voltages that both tune an analog VCO to adjust for frequency offset and for channel selection. Clarke does not disclose or suggest the subject matter of independent claim 29 for at least the following reasons.

Clarke nowhere discloses a device that digitally shifts the data in frequency required by independent claim 29. Rather, Clarke discloses creating offset voltages that both tune an analog VCO to adjust for frequency offset and for channel selection. Clarke states that "the operational amplifier 13a, 13b ... applies to the input of its respective source 12a, 12b ... the bias signal Vb for regulating the frequency of the source in accordance with the last corrective signal generated by the frequency discriminator 60 for that source 12a, 12b ..." (see Clarke, col. 11, ll. 56-61). In contrast, Applicants' claimed invention performs frequency shift by digital modification of the data-containing baseband signal as specified in the independent claim 29.

Therefore, for at least these reasons, Clarke neither discloses nor suggests a device that includes a frequency shift block being adapted to digitally shift the data in frequency in accordance with a common carrier frequency and the carrier frequency offset as required by independent claim 29. Accordingly, Applicants respectfully submit that independent claim 29 is allowable over the art of record.

Independent Claims 1, 15, 34 and 35

Applicants' independent claims 1, 15, 34 and 35, as amended, recite, *inter alia*, a method and devices used in a communication system, where the communication is a OFDM, NBFDM, DMT, FDMA or TDMA system, in which a first unit communicates with a second unit using a common frequency where: initially, the first unit transmits a first signal to the second unit from which the second unit detects an offset between the common frequency used for the first signal and its own used common frequency; then, the second unit adjusts its own common frequency using the previously-determined reception offset for transmitting a second signal back to the first unit.

Liu neither discloses nor suggests a method and devices as required by amended independent claims 1, 15, 34 and 35 for at least the following reasons.

Liu nowhere discloses a OFDM, NBFDM, DMT, FDMA or TDMA communication system as required by amended independent claims 1, 15, 34 and 35. Liu discloses a method and device used in a spread-spectrum CDMA communication system. As is known in the art, the CDMA protocol is not the same as, nor obvious over, a communication system that uses OFDM, NBFDM, DMT, FDMA or TDMA. In contrast, Applicants' invention requires that the first unit and the second unit communicate within the OFDM, NBFDM, DMT, FDMA or TDMA communication system over a common frequency.

For at least this reason, Liu neither discloses nor suggests a method and devices as required by amended independent claims 1, 15, 34 and 35. Accordingly, Applicants respectfully submit that independent claims 1, 15, 34 and 35 are allowable over the art of record.

Dependent Claims 2, 4, 5, 8, 16, 18, 19 and 22

Dependent claims 2, 4, 5, 8, 16, 18, 19 and 22 all ultimately depend from one of amended independent claims 1 and 15. The allowability of dependent claims 2, 4, 5, 8, 16, 18, 19 and 22 thus follows from the allowability of amended independent claims 1 and 15; as such, for at least this reason, dependent claims 2, 4, 5, 8, 16, 18, 19 and 22 are allowable over the art of record.

Claim Rejections under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 9 and 23 under 35 U.S.C. §103(a) as allegedly being unpatentable over Lui in view of U.S. Patent No. 5,805,029 to Theus et al. (hereinafter, "Theus"). Further, the Examiner rejected claim 31 under 35 U.S.C. §103(a) as allegedly being unpatentable over Clarke in view of Theus. Applicants respectfully traverse the rejections of claims 9, 23 and 31.

Dependent Claims 9 and 23

Dependent claims 9 and 23 ultimately depend from amended independent claims 1 and 15, respectively. The allowability of dependent claims 9 and 23 thus follows from the allowability of amended independent claims 1 and 15; as such, for at least this reason, dependent claims 9 and 23 are allowable over the art of record.

Independent Claim 31

Applicants assert the reasons stated above, in relation to independent claim 29, as reasons why Clarke is also inapplicable to independent claim 31. Therefore, one of ordinary skill in the art would not have considered Applicants' invention obvious at the time of invention and, therefore, Applicants' rejected independent claim 31 is not obvious over the art of record.

For at least these reasons, Applicants respectfully submit that claims 9, 23 and 31 are allowable over the art of record.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition of allowance and a Notice to that effect is earnestly solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

CHARGE STATEMENT: The Commissioner is hereby authorized to charge fees that may be required relative to this application, or credit any overpayment, to our Account 03-3975, Order No. 073169-0259697 (ATH-005).

Respectfully submitted,
PILLSBURY WINTHROP LLP

By: 

Ross L. Franks, Reg. No. 47,233

For: David A. Jakopin, Reg. No. 32,995

2550 Hanover Street
Palo Alto, CA 94304-1115
Tel. No.: (650) 233-4897
Fax No.: (650) 233-4545

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